

ABSTRACT

Effective differential dynamic range in a differential pixel detector is increased by avoiding saturation effects due to common mode contribution in optical energy to be detected. Photocurrent generated by each photodetector pair is directly integrated by an associated capacitor over an integration time T . Within time T , before either integrated capacitor voltage reaches V_{sat} for the photodetector, at least one of the capacitors is reset to a voltage such that the desired differential detector signal is still determinable. Reset may be generated externally or internally to the differential pixel detector.